U. S. TREASURY DEPARTMENT
HENRY MORGENTHAU, JR., Secretary
U. S. PUBLIC HEALTH SERVICE
THOMAS PARRAN, Surgeon General

PERSONAL HYGIENE

Compiled by
ROBERT OLESEN
Assistant Surgeon General
United States Public Health Service

SUPPLEMENT No. 137
TO THE
PUBLIC HEALTH REPORTS

United States Government Printing Office
Washington : 1938

For sale by the Superintendent of Documents, Washington, D. C. - - - - - - - - - - Price 10 cents

Copy 2

RA776
.C45
1938

LIBRARY OF CONGRESS
JUN 7 1938
DIVISION OF DOCUMENTS

W S 17 J e 58

CONTENTS

	Page
Foreword	V
Good sanitary manners	1
Immunization against the infectious diseases of childhood	5
School hygiene	9
Dental health	13
The food we should eat	16
Good posture	20
Sport for health's sake	24
Care of the hair and scalp	28
First aid methods for treating the injured	32
Hygienic adjustments throughout life	36
Hygiene of old age	40
Health rules	44
References	45

FOREWORD

THE PUBLIC HEALTH SERVICE receives many requests for information concerning personal hygiene. These come from all parts of the country—from persons of both sexes and of all ages. At times all members of certain school classes are instructed by their teachers to ask the Public Health Service for such information. In the past it has been the practice, in response to such requests, to send a collection of separate mimeographed statements on various phases of the subject. This information, though quite authentic, has not heretofore been correlated and brought together in a single publication. The present pamphlet represents an attempt to consolidate some important available facts regarding personal hygiene in readily understandable and assimilable form. Should this compilation of related material on the subject prove to be of practical value, it may later be amplified.

The impression prevails in the minds of many persons that in some mysterious manner the individual health is safeguarded by Federal, State, and local agencies, both official and voluntary. However, it should be understood that while the public health agencies make many valuable contributions to community and personal hygiene, it is through individual understanding and effort that the tangible benefits are obtained. This makes health maintenance largely a personal responsibility.

Personal health should be a natural development, without too conscious an effort. The overly solicitous person is likely to become introspective and may develop into a faddist on diet, exercise, or thought, thereby undergoing a disturbance of mental and physical

equilibrium. Such departures from normally established and temperate procedures cannot but react unfavorably. Undoubtedly the best advice that can be offered to those seeking good health is to observe moderation in all things.

In the chapters that follow, certain phases of personal hygiene are discussed. Originally prepared for radio use by well-qualified physicians, the material has frequently been revised and brought up to date. Instead of an extensive and all-inclusive bibliography, there are given a few references to what are regarded as authoritative and understandable books, pamphlets, and reports.

A considerable experience with persons seeking health information leads to the conclusion that very few utilize data from the most accessible sources. In general, information of this type may be obtained most conveniently through the medium of the local school or public library, the local health officer or other authority in one's own community. In the event that queries are not readily answered by local officials, recourse may be had to the State department of health, which is usually well equipped for supplying reliable information. When the sources suggested fail to provide needed data, questions may be addressed to Federal agencies, including the Public Health Service in Washington.

It should be understood that the present treatise is not intended to be more than a partial discussion and guide to a few phases of personal hygiene. For more detailed information the reader should consult the references mentioned in the short bibliography.

GOOD SANITARY MANNERS

ALTHOUGH the popular demand for books on social etiquette is more or less adequately supplied, as yet there exists no manual or handbook on the important question of the etiquette of hygiene, or, if you please, the hygiene of etiquette. This is truly unfortunate, because hygienic good form is just as important as social good form. Indeed, hygienic good form should be an essential part of social good form. It is just as bad to commit sanitary errors as social errors, and

the penalties are often far more serious for such breach of good manners.

For instance, among the several modes of transmission of human disease, modern sanitarians have assigned high place to personal contact. There are a large number of serious and important diseases, known as contact infections, which are transmitted and propagated largely, if not exclusively, by personal contact. Such diseases include pneumonia, influenza, diphtheria, scarlet fever, measles, whooping cough, smallpox, chickenpox, mumps, and the common cold. These are, of course, all "contact" diseases. Their method of spread is through personal contact between a person who harbors the infection and another who is susceptible to the same infection. In typhoid fever and some other diseases, the person who harbors the

infection need not necessarily be sick; he may harbor the infection as a carrier—and in some diseases the carrier is an important source of transmission.

These personal contacts may be direct or indirect, the more direct the more dangerous they are. Such contacts literally represent an exchange of bodily secretions or excretions between the persons involved. These contacts are far more common than most people realize; and under our modern complex social organization, especially in large cities, close personal contacts in a variety of ways are absolutely unavoidable. Some depend upon customs and usages difficult to break up, as for example, inconsiderate use of the handkerchief with soiling of the hands, indiscriminate kissing, and handshaking. The Chinese custom of bowing and then shaking one's own hand is far more desirable from a sanitary standpoint. There are a number of these contacts, however, which cannot be defended on any grounds. They simply represent unhygienic manners. One of these habits is particularly reprehensible, and it is this habit especially which is to be discussed in this chapter.

Often it is good business psychology to center all effort of salesmanship on one product, and not dissipate energy on several different products. Perhaps this may be applied to "selling" good hygienic habits to the public. Indeed, this principle has been applied more or less effectively in the banishment of the common roller towel and the common drinking cup. Now let us try to "sell" not one more good hygienic habit, but the condemnation of one more bad hygienic habit.

A common method of transferring disease germs from one person to another is the easily avoidable and thoroughly condemnable habit of putting one's fingers in his mouth before performing some action that involves another person. It is usually associated with the passing of some article to another person after it has been wet with saliva. Could there be any closer or more direct personal contact between individuals?

From time immemorial, spitting has been accepted as a practice most expressive of filth, disgust, contempt, and insult. While the particular manner of the action may differ, the habit of moistening the fingers with saliva cannot entirely divest itself of the odium attaching to franker forms of expectoration.

A physician, one trained in bacteriology and in modern surgical cleanliness, may show an inordinate reaction to such an act; but if he is more sensitive than the layman under such conditions, it is because he has a far truer comprehension of the meaning and significance of such a dangerous habit. And surely any person must resent having to receive saliva-moistened articles and to handle things wet with the saliva of another person. Whatever else may be said, does not everyone see the filth of such a practice? And should not everyone

resent it? One would think so; and yet this practice goes on daily without protest from the public.

The prevalence of this deplorable custom is widespread. From limited observation, it would appear particularly common among those who have to handle paper of any kind, that is, paper which is piled in stacks or bound in books. But it is by no means confined to those engaged in such activities. With many persons it seems simply to be a form of nervousness, or a nervous bad habit. It would be a service to public health if observers would report the various forms under which addictions to this habit may be noticed. It may be safely asserted that any one so observing will be astounded to learn how widely this pernicious practice exists among different classes of people.

An officer of the Public Health Service has vigorously called attention to the action of certain clerks in cigar stores. "The serenity of my sanitary conscience," he writes "is much disturbed by a practice common to entirely too many people—and most annoyingly prevalent among those who purvey cigars and cigarettes to the initiated."

"True, I am only one voice among them, but I lift up that voice like a foghorn on a misty morning in protest against the abominable habit of the clerk who sticks his fingers in his mouth, and then serves a harmless customer with a package of cigarettes, wet with his saliva.

"This is a dangerous and disgusting habit which I seek, vainly, to avoid—and it is 10 times condemnable for its utter uselessness. Even worse—in many shops the management, evidently aware of this form of human weakness, supplies convenient sponge cups, but they remain vain and pitiful symbols of an antiseptic usage conspicuous for its absence."

This officer deserves sympathy. If you think the prevalence of this habit is exaggerated, simply look about you, and there is little doubt that you will soon learn that it is a common thing in your daily life.

Witness one day's possible experience in a large city:

One leaves home for business in the morning. On the streetcar the conductor uses his tongue as a sponge cup and thereby moistens the transfer with saliva; the news dealer does the same with the morning paper as he pulls it off the pile; the clerk in the cigar store similarly treats the morning package of cigarettes; clerks in the office employ the same method with papers handled in the day's business; at the lunch hour one visits a railway information bureau concerning a proposed trip and the clerk hands out a saliva-moistened schedule; a purchase is made on the way home and a clerk uses the saliva method to pull out the wrapping paper in which he wraps up the parcel; business done, one again seeks the streetcar, perhaps to have the conductor "thumb" another transfer; and as you sink into the seat a girl across the way licks her fingers to turn the pages of a public library book which she is reading. And so, home, at the end of a

perfect day of saliva-moistening procedures, a fit subject for a bath and fumigation.

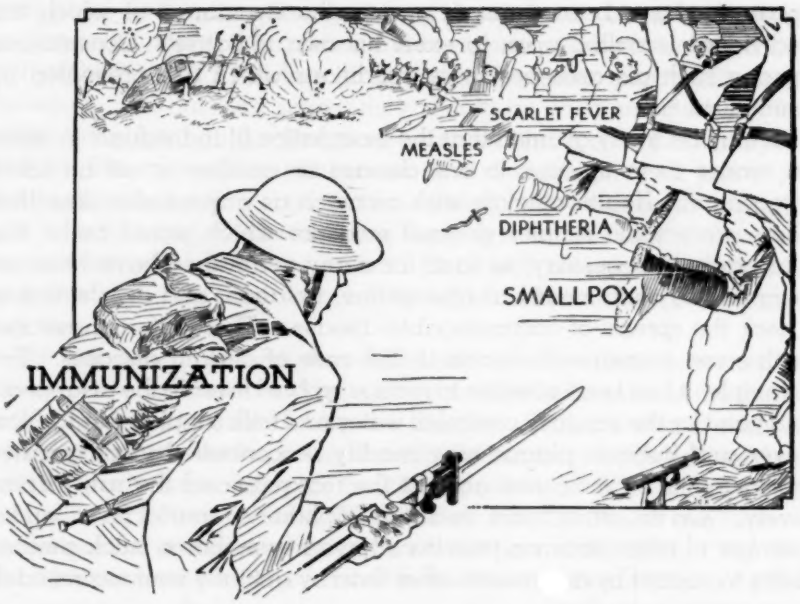
Some time ago a sanitarian, impressed with the undue prevalence of customs and habits involving an exchange of saliva among persons in their daily contacts, cleverly suggested, in order to visualize what was really going on, that we should imagine salivary secretions colored blue. He then, in imagination, followed a few individuals through a day of active existence. At the end of the day he tried to evaluate them chromatically. He concluded that most of them would be found well spotted with an indigo blue.

What should we do about it? Certainly in matters of this kind education is far more effective than law. If people generally disapprove unhygienic habits, then public opinion will correct them speedily.

Why condemn promiscuous spitting, unguarded coughing and sneezing, and common drinking cups, if we continue to permit people to contaminate objects by saliva-moistened fingers? They should all be condemned together.

The essence of good manners is, after all, consideration for others. This is applicable equally to social or hygienic good form. When some one writes the book that has been mentioned on "The Hygiene of Etiquette," then, let us hope, we shall all learn more about prophylactic manners and practice hygienic as well as social courtesy.

And high in the sanitary decalogue, let us also hope, will stand the commandment, "Thou shall not make of thy tongue a sponge cup at any time; to do so is an offense against both decency and health." And though this be not supported by the thunders of Sinai, yet will it be obeyed if it have the approval of a public that appreciates what is meant by hygienic manners.



IMMUNIZATION AGAINST INFECTIOUS DISEASES OF CHILDHOOD

UP TO THE present time the most significant advances in public health achievement have been manifested among the lower age groups. It is true, of course, that the great sanitary reforms such as the filtration of water supplies, have remarkably diminished diseases of certain kinds among all ages and classes of persons, but the actual saving of life has been most pronounced among children, and especially little children and infants. It is for this reason that the expectation of life at birth—that is, the average length of time that all children born at a given time will live—has increased from about 49 to about 61 years in the past 35 years.

This is very encouraging, because it shows clearly that much of the disease from which the human race has been suffering, and many early deaths, can be avoided if we put our best existing sanitary knowledge into practice. But while it is gratifying to know that we are on the right track in the battle against disease, it is true that there is another side to the picture: A great waste of health and life still continues as a result of the failure to apply existing knowledge.

There are some diseases which may be controlled and eventually eradicated by general measures undertaken by the community in which the individual citizen is seldom called upon to take part. There are a great many other diseases, however, for which as yet no general

measures have been devised, and in the avoidance of which the individual is called upon to exert his own initiative. Conspicuous among such diseases are those conditions which are prevented by immunization.

It may be freely granted that the inoculation of individuals in order to render them immune to one disease or another is not an ideal procedure. Health officials wish as much as anyone else does that there were some simpler general measure which would make this procedure unnecessary; in fact, for many years they have been attempting by such means as quarantine, isolation, and disinfection to check the spread of communicable disease. These efforts have met with some measure of success in the case of certain diseases. For example, it has been possible to reduce typhoid fever to the disappearing point by the sanitary control of water and milk supplies, and yellow fever and bubonic plague may readily be controlled in progressive communities by measures against the mosquito and the rat, respectively. On the other hand, smallpox, diphtheria, scarlet fever, and a number of other common infections have never shown much amenability to control by any means other than by actually immunizing each susceptible individual.

There is really no need for anyone nowadays ever to have either smallpox or diphtheria, and these diseases, as is well known, have been in the past among the most deadly of scourges. Vaccination against smallpox, repeated in a few years, will protect against smallpox. Such great improvements have been made since the introduction of this method that no one should hesitate to have his children vaccinated during the first year of life. These improvements have been both in the methods of preparing the vaccine and in its administration. The United States Government, through the Public Health Service, now supervises all of the plants in the United States which manufacture biological products used in immunization, and passes on foreign establishments which market their products in the United States to make sure that the methods are correct and that the personnel is competent, and tests are made on the completed product to insure that required standards are met. Moreover, a technique of vaccination has been evolved which makes the vaccination a trifling affair so far as discomfort is concerned, and reduces the likelihood of "sore arms" to a minimum. It has also been discovered that the best way to treat the arm after vaccination is to let it alone. Shields and other dressings which have to be strapped on with adhesive plaster are the chief cause of sore arms, because they make the sore moist and hot and do not allow proper circulation of blood and lymph. With the tiny insertion now advocated, and without any dressing whatever, these vaccinations do well.

Children should be vaccinated against smallpox before they are a

year old. At this time they have not begun to run about and are in no danger of hitting the vaccination against hard objects or of getting dirt rubbed into it, and they are rendered immune practically from the start. On entering school they should be vaccinated again, for several reasons. In the first place, vaccination does not always protect for life; it requires reinforcement of the immunity in many individuals to make sure of protection against heavy exposures to smallpox. Fortunately, if the child already has an immunity, the new vaccination will not take. Instead there will be merely a little red spot developing for only about a day, which is known as the "immune reaction."

We can now state also that diphtheria is an entirely preventable disease, and diphtheria antitoxin has enormously diminished the death rate among those attacked by the disease. It is an almost certain cure if given very early during the attack; but there occurs altogether too frequently some delay in its administration, so that its beneficial possibilities are not realized. This delay may be due to negligence on the part of parents or hesitation on the part of the doctor, but the child patient too often pays for it with his life. Antitoxin does not cure or prevent the condition of "carrier." "Carriers" are people who, without being sick themselves, carry about the germs of diphtheria in their throats or noses and innocently distribute them among persons with whom they come in contact. Consequently, something new was needed in the fight against diphtheria, great though the advance had been. This was found in the toxin-antitoxin mixture, evidence concerning which suggests that it is capable of immunizing for many years those to whom it is administered, possibly for the remainder of their lives. The newer preparation known as diphtheria toxoid is even better. Neither of these preparations, however, can be relied upon absolutely to immunize everyone to whom it is given; and the administration of either of them should always be followed by a Schick test to find out whether immunity is complete or not. If not, additional injections should be given. It cannot be too strongly recommended to parents that they have their children immunized against diphtheria by this means. It is believed possible in this way not only to check the prevalence of diphtheria, but after a time absolutely to eradicate it. In fact several American communities have already practically reached this goal after persistent efforts to get every child in the city immunized. Naturally this should be done at an early age. While it is better to do it when or after the child enters school than not at all, the preschool age is the period during which the greatest danger from diphtheria occurs, and it is advised that the injections be given as soon after the age of 6 months as possible.

Besides the two diseases which have been discussed, smallpox and diphtheria, there are several others against which it is possible to

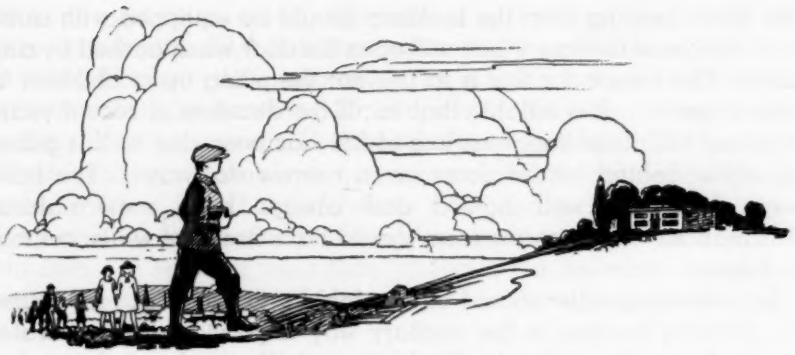
immunize children, but for one reason or another it is not advised that every child be so immunized. Scarlet fever, for example, is nowadays so mild in this country that health authorities seldom find it necessary to recommend wholesale immunization against it. The chief value of scarlet fever immunization is in institutions where the disease, if introduced, would be likely to spread rapidly through the entire susceptible personnel unless they were protected.

In the case of measles, again it is not advised that the whole child population of a community be immunized; but, for example, if one child in a family has contracted measles it is often possible to protect the remaining children by the administration of immune serum.

Typhoid fever is now so well guarded against in most of our cities by protective sanitary measures that it would be wasteful and unnecessary for everyone to take the typhoid vaccine. Typhoid vaccination, however, is an excellent protection for persons who travel about much in places where the practice of sanitation is not well developed.

With regard to rabies, frequently referred to as hydrophobia, persons who have been bitten by a dog suspected to have rabies should consult a doctor as to the advisability of having the Pasteur treatment administered.

Health officials are so convinced of the need for universal immunization against both smallpox and diphtheria that they are doing everything possible to make it easily available, and facilities are extended in most of the health offices for the immunization of those who for one reason or another do not consult a private physician for such services.



SCHOOL HYGIENE

THIS chapter deals with some of the fundamental principles of school hygiene. The purpose it is hoped to accomplish is to interest parents and teachers in this important problem. There is no organization capable of more good results in child welfare than the parent-teacher or the home and school association. In their meetings, the hygiene of the school building should receive very earnest consideration. Parents should realize that the school building is the child's second home, and it behooves all of us to study and improve the surroundings of the child at school.

First the exterior of the building and the playgrounds will be considered. The location of a school building is important. It should be so placed as to be readily accessible to groups of children. The dangers of traffic now have an important bearing on school location. There should be no nearby nuisances, such as railroads, abattoirs, or factories. The grounds should be well drained, and the play area should be surfaced so as to be free from mud on wet days. Gravel or crushed stone is perhaps the best material to use for this purpose. In the grade schools there should be a minimum of 50 square feet of play area for each pupil, and additional ground space for gardens is highly desirable. Trees are not to be considered a necessity and should not be near enough to the building to cast a shadow over the windows. Landscaping should, of course, be done if there is an opportunity, but this should not be given preference to the exclusion of playgrounds.

The exterior of the building should be attractive without interfering with the natural illumination of the rooms. No grade school should have more than three floors. Of course the building should be fireproof. The halls should be wide and have as much natural ventilation and illumination as possible. The exits from the building should be wide, and it is very important that all doors in the building—in the rooms, in the halls, and to the outside—should open outward.

The doors leading from the building should be equipped with automatic foolproof devices which will open the door when pushed by any child. The reason for this is to prevent the piling up of children in case of panic. It is notable that in all the disasters of recent years in school buildings the great loss of life has been due to this piling up, either behind locked doors or in narrow stairways. The hallways should be well lighted and always have some natural illumination. The furnace room should have fireproof walls, ceiling, and doors.

Safe drinking water should be available in all schools. Of course the drinking fountain is the sanitary way to provide drinking water for children. The fountain should never be located in toilet rooms; the corridor is the preferable location. One fountain to about 50 children is a good proportion. The type of fountain is very important. Many schools provide fountains which are as insanitary as the common drinking cup. The only satisfactory fountain is the type which sends the water from the side of the basin and delivers the stream of water obliquely. Any fountain which permits the child to cover the bubbler with his lips is to be condemned.

If the proper drinking fountain cannot be provided, then paper cups should be used. If the ready-made paper cups are too expensive, children should be required to supply and use individual glasses or cups. The public's abhorrence of the common drinking cup is well-established and deservedly so.

Toilet and washing facilities should be of the best type and are to be kept clean at all times. It is necessary to teach the child to keep the toilet rooms as clean as the home bathroom.

When possible, washbowls with hot water and a supply of liquid soap should be provided in each toilet room. One bowl to each 20 children is the minimum proportion. The bowls should be placed at convenient heights for children's use. The paper towel is the only satisfactory drying material available for schools.

If children are to learn the fundamental health habit of the proper care of the hands after going to the toilet and before eating, the lavatory facilities should be kept attractive. This requires the close attention of the teachers and janitor. No sanitary device is self maintaining.

Of course separate toilet facilities should be provided for boys and girls. Few persons realize that there are actually at the present time, schools in this country where boys and girls are forced to use the same toilets under unbelievable conditions.

Toilet rooms should be well-ventilated and should be so situated that the sunlight will enter them during part of the day. Spotless cleanliness is the ideal. One toilet seat to every 15 girls and one to every 25 boys is the standard. It is unwise to use so-called disin-

fectants and deodorants. Cleanliness is the best deodorant and disinfectant after all. Soap and water are the best deodorants.

Now we come to the classroom. This is the unit of a school building. Whether there be 1 room or 20 in a school, the requirements are the same. The classroom is the school home of the child. The provision of adequate and suitable rooms requires much thought and ingenuity on the part of the school architect. The ideal schoolroom is 30 feet long and 20 feet wide, providing comfortable space for about 30 children. A width of more than 20 feet is not desirable, because, if wider, the row of seats farthest from the window will not receive proper illumination.

Let us now consider illumination. Long-continued study of natural lighting has shown certain definite fundamental requirements. These are as follows: The windows should extend as near the ceiling as possible and the ceiling should never be less than 12 feet high. Unilateral lighting is considered to be the best system. This means that the windows should be on only one side of the room so that the light will come from the left, and these windows should extend as far back toward the rear wall as possible. Every child should be able to see some sky when seated at his desk. The area of glass in the windows should equal at least 20 percent of the floor space. Shades should be provided for each window, two to each window being preferable, the two shades being placed at the middle of the window so that one pulls up and the other down. It should always be remembered that the best light enters through the upper third of the window.

To provide the best light and to avoid glare is the ideal plan. The walls of the room should, therefore, be covered with a flat paint. A light green gray is desirable. The ceiling should be flat white. Blackboards should be limited to the front of the room and to the right side. The rear of the room should be free from blackboards, and blackboards should never be placed between windows. As a matter of fact, if enough window space is provided, there will not be space enough between the windows for blackboards. It may be interesting to know that some of the most recent school buildings still have serious defects.

The classroom furniture is a very important feature of school hygiene. The movable desk and seat is preferable as regards the cleaning of the floors. The adjustable type is to be preferred. If this is too expensive, three different sizes for each grade should be selected so that each child will have approximately suitable postural facilities while studying.

The ventilation of the schoolroom is very important for the health of the child. For many years engineers have worked to provide suitable mechanical means for ventilating schoolrooms. The present-day opinion has materially changed. Simple window ventilation with

gravity exhaust is considered best for the ordinary classroom. Auditoriums and assembly halls require special mechanical devices, but the classroom does not need these. The window board ventilator for each window and an outlet on the opposite wall near the ceiling, or in the ceiling, which leads to a roof ventilator, is the most economical and healthful method available today. Of course each room should have a thermometer, which should receive the careful attention of the teacher. During the colder weather a room temperature of 68° to 70° F. is best, especially when there are provisions for humidification.

Each classroom should have its own cloakroom. For the older children, individual steel lockers are best. The cloakrooms should also have heating facilities as well as outside illumination and ventilation. Where hooks are used, they should be at least 12 inches apart. Such facilities can usually be provided in a cloakroom.

Janitor service is important for cleanliness, heating, and ventilation. Sweeping should always be done after school hours, and either the vacuum system or the use of sweeping compound is necessary for the proper cleaning of the floors.

To sum up this brief discussion of school hygiene, every effort of parent and teacher should be made to provide school surroundings equivalent to those of a modern, well-conducted home.

DENTAL HEALTH

THE correct diet for a prospective mother, the correct diet for a child through infancy to maturity, the correct use and proper care of teeth, sufficient exercise and rest, are all essential to build better and stronger bodies, better and stronger teeth, and to make cleaner and clearer minds and happier dispositions.

This ideal way of living would eliminate the many sleepless nights because of toothache; it would eliminate indigestion because of inability to chew the proper food, and discomfort caused by poisons entering the system from infected teeth, their surrounding structures, or from decayed food which accumulates in cavities of the teeth. It would also eliminate a lessened resistance to colds, or, in other words, a greater susceptibility to contagious or infectious diseases, because the natural immunity or high resistance of a healthy individual would be sufficient protection in many cases. In fact, it would eliminate many of the physical handicaps which are so common today, and it would raise the standard of health in every community.

The most prevalent of all human diseases is tooth decay. We are told that more than 80 percent of all children below the age of 12 years are handicapped by this condition, and few people reach adult life without having experienced dental decay, resulting usually in the loss of one or more teeth.

If you were to see all the school children of a large city gathered together in one group, and if 8 out of every 10 were crippled, deformed, or maimed in some manner, your heart would cry out in pity for them, and you would become frightened to see so many of the youth of our country starting out in life with such terrible handicaps.

Every child who has decayed teeth is a crippled child; and this disability may be much more serious to him so far as his general health is concerned than would some more noticeable handicap which you would see immediately. He has a crippled chewing machine which cannot properly prepare the food for his stomach, and so the child is undernourished. If the child cannot properly chew his food because of sore or tender teeth or because of red and inflamed gums surrounding the teeth, the food he swallows will not give him the energy he needs or build the bones or other structures of the body, no matter how carefully such food is selected or prepared.

While we know of no means that will entirely prevent decay, we

have acquired knowledge that is very helpful. The proper use of the teeth tends to keep them in a state of health. We should eat food that requires chewing, and we should chew our food on both sides of the jaw. If only one side is used, it is invariably cleaner and healthier than the unused side, which will show teeth coated with film, food debris, and salivary deposits, and the surrounding structures are usually tender and bleed readily.

Foods should be chosen not only for their nutritive value but also for their chewing qualities. The mouth should be thoroughly cleaned after each meal, if possible, and always before going to bed. In cleaning the mouth it is necessary to know how to use the tooth brush properly. Much harm can be done if the tooth brush is improperly used over a long period of time, or if it is not kept in the proper condition. Your dentist will instruct you in detail just how the tooth brush should be used and cared for.

Many people regard the dentist as a professional man who maintains his office only for the correction of dental defects that he is called upon to repair. The fact is lost sight of that this is also an age of preventive medicine and preventive dentistry, and that the dentist devotes just as much of his time to the prevention of disease as to its correction. Many teeth are not properly formed when they erupt, or break through the gums. If your child is taken to your dentist at the time the first temporary teeth appear and at regular intervals thereafter, the dentist will be able to find these irregularities immediately and can quickly correct them without pain or inconvenience to the child. The theory that it is necessary or advisable to postpone dental treatment until the permanent teeth appear is a very serious mistake on the part of the parent. As soon as the teeth are erupted the child should be taken to the dentist for advice as to the proper care and attention to be given the baby teeth, which are the foundation for the growth of the jaws and the development of the permanent teeth. Failure to do this may result in a deformity of the face and jaws.

When a child enters the first grade of school he has 20 baby teeth, and at about 6 years of age he develops the first of his second teeth, or the first permanent molars. These are the largest and most important teeth in the mouth, for they hold the jaws in a definite relation to each other while the 20 baby teeth are being shed and the permanent teeth are taking their places. The whole chewing machine is seriously crippled if these teeth are damaged or lost, and they are the only grinders while the temporary molars are being exchanged for the permanent teeth. Just as soon as these teeth appear, the child should be taken to the dentist in order that they may be inspected and repaired if found to be defective, which is frequently the case. This will prevent a serious condition that might develop within a few months.

Careful attention to the care of the teeth of children is a very important factor in the preservation of the health of the child.

Children's dentistry is preventive dentistry. The prime purpose of children's dentistry is to retain a full complement of deciduous teeth (baby teeth) till their proper shedding or exfoliation time. During the period of infancy and childhood all parts of the head grow rapidly and some of them reach adult dimensions. Consequently, the full and unimpaired use of the teeth is necessary to prevent serious and permanent effects on the general development of the child.

Preventive dentistry seeks to prevent or remedy crooked teeth and malformed mouths. Sound baby teeth or teeth kept in good repair insure proper development of the muscles of chewing or mastication and promote the normal growth of the jaws and bones of the face, thus preventing deformities. The child with malocclusion, or crooked teeth, is a likely subject for the development of an inferiority complex, and usually suffers untold mental anguish because of his appearance. He is very likely to have speech impediments. These irregularities, with constricted jaws, lead to nasal obstruction, mouth breathing, under-developed chest, and increased tendency to respiratory or lung diseases.

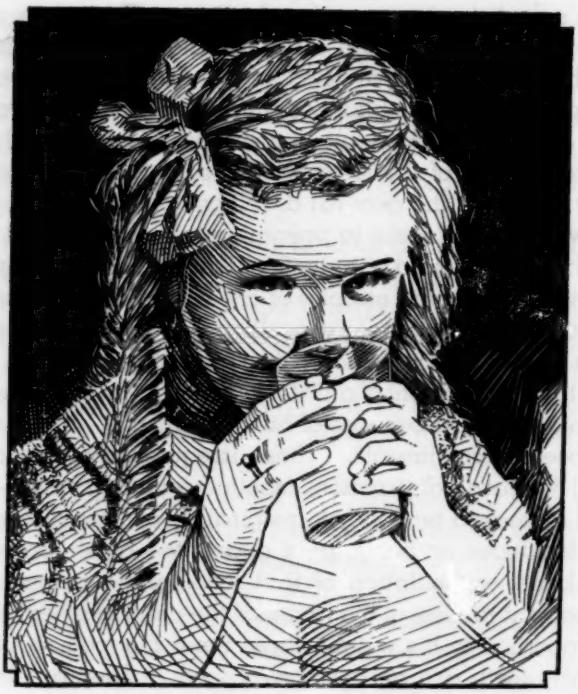
Sound deciduous or baby teeth guarantee better preparation of food and better assimilation of that food for nourishment. This is vitally important in view of the fact that the child must eat and assimilate, in proportion to his weight, three times the food required by an adult. Baby teeth are not temporary teeth. They are teeth which are used during about one-fifth of the life span. They have a full and definite service, not a temporary one.

The prompt filling of deciduous teeth endangered by decay will prevent teeth from becoming abscessed and infection getting into the body. Such infection from bad teeth may subject the child to heart, kidney, and lung diseases and be the cause of children's rheumatism. Mouth infection is the frequent cause of mental retardation and physical debility in children; and, as previously mentioned, increases the tendency to contagious diseases.

Preventive dentistry should start by building sound teeth and maintaining them by a proper diet. The first teeth begin to develop 6 months before the baby is born; therefore, the mother must eat foods rich in bone- and tooth-building properties, such as milk, vegetables, and fruits. From 6 months before birth and throughout breast feeding, the mother builds the foundation for the child's teeth.

Neglect in childhood means opportunity forever lost. Help your child to enjoy good teeth. It will prevent suffering, will add to his life span, will make him more comfortable, and he will be more efficient and more beautiful.

The physical condition of the child should receive attention equal to that given his education. Oral hygiene and health education should be taught in our schools and to families and prospective mothers if our race is to improve and advance with each succeeding generation.



THE FOOD WE SHOULD EAT

THE question of what to eat is one of our daily problems that, too frequently, is decided on the basis of convenience instead of logical thinking and accurate knowledge. The food we eat has much to do with whether we shall have a healthy body or a sick one, and improper food selection often leads to conditions that can be corrected only by long periods of proper food adjustment.

A little too much fat or carbohydrate in the diet may eventually result in obesity, which frequently is never properly corrected. An insufficient amount of certain of the vitamins may produce serious disease, permanent deformity, and sometimes death, if not corrected in time. It is indeed fortunate for our well-being that the selection of the proper foods is not difficult. The foods we should eat can be determined without the aid of a dietitian, and are available in every American city.

In addition to water, there are five groups of substances that must be present in our diet if we are to remain healthy. These are as follows: (1) Vitamins, (2) minerals, (3) proteins, (4) fats, and (5) carbohydrates. American diets, when deficient at all, are most likely to be deficient in minerals and vitamins, and the American housewife should be particular to secure an adequate supply of these substances.

We now know of several different vitamins, all of which must be in the diet if health is to be maintained. These can be conveniently considered in three classes: First, those obtained in fats—such as butter, cream, and fish-liver oils; second, those which are destroyed by cooking and which are obtained in fresh, uncooked vegetables and fruits, such as lettuce, cabbage, tomatoes, oranges, apples, etc.; and, third, the vitamin not harmed by cooking, and obtained principally in lean meats and milk.

Minerals are necessary for the proper formation of bones and blood. Milk is one of the most important foods we have for richness in minerals and vitamins. It supplies most of the vitamins and all of the minerals we need, except iron. It is especially rich in lime. Oatmeal is fairly rich in vitamins and minerals. Dried beans contain iron, phosphorus, and calcium. Spinach, lettuce, cabbage, and other green leafy vegetables provide minerals and vitamins. Tomatoes, oranges, and apples are also to be recommended.

After an adequate supply of minerals and vitamins is assured, the next most important thing to be considered is the protein. The proper kind and amount of protein must be present or normal growth and development will not take place. It has been estimated that the daily diet of an average man should contain about 3½ ounces of protein. If we secure our protein in the cheapest manner (that is, in vegetables, particularly beans of various kinds), we obtain a protein of poor quality, and in order to make the diet correct we must add protein of higher quality, such as that from milk, milk products, meats, fish, and eggs. Those who can afford it usually prefer to have most of their protein in the more costly form of eggs and meat on account of their palatability. Protein from milk and meat is known as complete protein, on account of its good quality, and the fact that it does not require the addition of protein from other sources.

After attending to these items, the energy value of the diet should be taken into consideration. We must know how much to eat in order to have enough fuel to do our work without using the body tissues. In order to know this we estimate the fuel value of the diet in calories. The calorie is simply a convenient unit of measure. One ounce of protein or carbohydrate supplies about 115 calories, and one ounce of fat about 264 calories; and so all that we have to do is determine the composition and amount of the food we eat in order to know the fuel value of our diet. Most books on nutrition and dietetics give tables showing the caloric value of definite amounts of the common foodstuffs. It has been estimated that an American man or woman living a quiet life at home, with little exercise, needs about 2,500 calories a day; if working, without much exercise, 3,000 calories; on light work, 3,500 calories; and if doing hard work, 4,000 or more calories are necessary.

Fats are important additions to the diet on account of their high energy value. They supply about twice as much energy as an equal weight of protein or carbohydrate, and thus relieve the body of the necessity of dealing with an excessive amount of material in order to obtain a large number of calories. The most important fatty foods are butter and cream, because of their palatability and ease of assimilation, and because they carry vitamins with them. It is difficult to obtain a sufficient caloric intake in a diet which is without fat. However, an excessive amount of fat tends to cause digestive upsets in certain individuals and gives a disagreeable feeling of heaviness after eating. On the other hand, a proper quantity gives a desirable feeling of comfort and well-being. Improperly fried foods should be avoided, since grease soaked through the food tends to obstruct the work of the digestive fluids.

Carbohydrates are necessary in order for the body properly to use the protein and fats in the diet; and for this reason the bulk of the diet should be made up of carbohydrates, which may be obtained from the large number of starchy and sweet foods.

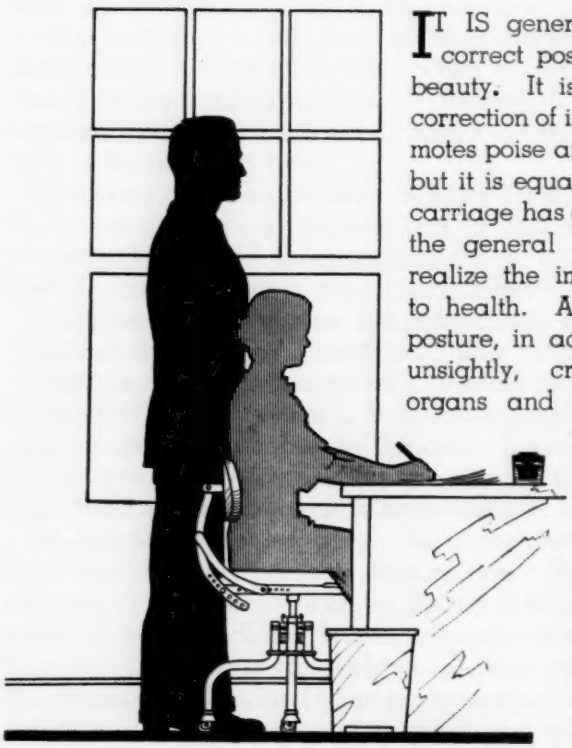
In addition to making the diet nutritionally sound, there are other important things to be considered. One of these is roughage. A certain amount of roughage seems to assist the body in handling the waste products of digestion. A sufficient quantity is usually obtained from the green vegetables in the diet. If enough of these are not eaten, bran or other cereal may be added to the diet, unless there is some condition which makes it inadvisable to include such items.

Another factor is palatability. An attractive table of well-prepared food tends to increase food consumption. The diet may also be planned so that there will be no feeling of hunger at the end of the meal. Certain foods are known to have a greater satisfying value than others. Meats of various kinds are most important in this respect. Butter and other fats, and soups containing meat extractives, are also valuable; and a dessert or other sweet food taken at the end of the meal increases its satisfying effect. Thus, a prominent American nutritionist states that a meal consisting of, first, a soup containing meat extractives; second, meat and potatoes, to which may be added starchy vegetables, then a salad with an oil dressing, and ending with a dessert, gives the greatest degree of satisfaction.

Some of the leading nutrition experts in the country have summarized a man's normal daily dietary needs, in order to enjoy health, as follows: One quart of milk, two salads, two liberal helpings of the leafy portions of green vegetables, one small helping of any meat and two eggs. He may add to this anything within reason that his appetite demands, including a liberal supply of bread, butter, fruit, and various vegetables. It should be remembered, however, that if we eat more food than we need, the body stores up part of the excess

as fat, and continued overeating leads to unsightly deposits of fat in the body. On the other hand, an insufficient amount of food leads to emaciation, even if all of the necessary dietary factors are present. We must, therefore, watch the quantity as well as the quality of the food we eat.

GOOD POSTURE



IT IS generally recognized that correct posture adds grace and beauty. It is quite true that the correction of improper postures promotes poise and makes for beauty, but it is equally true that an erect carriage has a marked effect upon the general health. Few people realize the importance of posture to health. A slouching, stooping posture, in addition to being very unsightly, cramps the internal organs and interferes with their proper functions. To walk with head up, chest high, and the toes straight forward, and to do so with ease, is by no means an unimportant accomplishment, and such a posture is a distinct health asset.

Do your children carry themselves so that their bodies can digest nourishing food? Do they take outdoor exercise, which develops their muscles and their morals, with curved backs and narrowed chests, or do they have an ideal of "form"? In the gymnasium do they watch their carriage as well as their development? We all admire a man or woman who stands straight and moves gracefully, but we are just beginning to appreciate the importance of these accomplishments to our general health. The word "accomplishments" is used advisedly, because good posture can be practiced just as certainly as can an ability to draw or play the piano.

The person who learns to stand so that the head, neck, and trunk form a vertical rather than a curved or zig-zag line will soon find that the beneficial results of such a posture are evident. A recognition of

the faults of one's posture is the first step toward correcting them, and toward the attainment of that grace of movement and health which is desired. Correct posture in sitting as well as in walking is important. The person who slouches or slumps low in a chair while eating hinders the digestive processes, cramps the lungs, and lessens his chances of good health generally.

Psychologists hold that self-consciousness is one of the most important factors contributing to individual failure. To destroy self-consciousness, get the body under control.

A man who enters his business office without self-consciousness and whose posture adds to his forcefulness and dignity presents an appearance of health and efficiency which cannot be neglected in considering the factors which make for success in business. Timidity is destroyed the moment the body comes under control. The straight up-standing lad of easy, graceful poise is much more likely to get the job than the boy who slouches in and asks for it while he leans against the desk.

Can you teach this accomplishment of good posture to your children? A great deal can be done, of course, by example. Do you know how to stand straight yourself? "Certainly, shoulders back," you say, perhaps. Not at all. Rolling your shoulders back won't get you into a correct posture, and if you do the other things you should, your shoulders will take care of themselves. "There is but one way to stand," says the Journal of the American Medical Association: "The head is up and the chin in and back; the head is balanced above the shoulders, hips, and ankles. The chest is elevated, with the breast bone the part of the body farthest forward. The lower abdomen is in and flat and the back curves are within the normal limits." It is not difficult to take this position because it means bringing the body to its natural lines and balance, but it is sometimes hard to learn and remember it until it becomes a habit. Dr. Goldthwait, one of the leading advocates of good posture, suggests that each family should practice a sort of posture grace daily after dinner; father, mother, and all the children lining up and standing exactly as they should stand for 1 whole minute. " It will surprise you," he says, "to see how quickly such a posture becomes a habit."

If you know even the most elementary bit of physiology you can explain to your children, and to yourself, why this erect, correct position is so important that it is worth taking a good deal of trouble to acquire.

We have to take far more thought of our posture than the four-footed animals do.

Standing correctly, you breathe freely and easily. Holding yourself correctly, you can run much faster and farther; your breath control is better. Tell that to the small boy who thinks it is all nonsense about

not curving your back when you crouch down in preparation for a tackle.

Standing or sitting correctly, your circulation works at its best; your head is clear; your mind and your imagination can race at top speed. Tell that to the small girl who likes to sit all curled up with a book in a big chair.

Keeping good posture when you are asleep is important, too. How can all that fresh air on the sleeping porch get into your lungs and around through your blood if you squeeze your lungs into unnatural positions, making their work twice as hard? Lie on your back, side, or face, as you please, but use a flat pillow and lie straight.

These directions and suggestions are for the perfectly normal child who needs only to be kept straight, not to be made so. Can anything be done for the others? A very great deal, but it must be done if possible before the child is 18. Far more youthful and adult ills are due to incorrect posture than most of us realize. A child who is nervous and fretful because his digestive apparatus does not function properly can be greatly helped by being taught to carry himself correctly. Undernourishment is frequently due to other causes than incorrect food. It is possible that the child who is always tired may need not so much rest as posture training. Here is a fundamental exercise:

Let the child stand with his heels 4 inches from the wall, but with hips, shoulders, and head touching the wall. This is the starting position for the exercise which follows: Flatten the lower back against the wall by pulling in the abdominal muscles while strongly contracting the buttock muscles. (This causes a downward rolling motion in the lower part of the back that flattens the lumbar curve. All motion occurs at the waistline and the hips. The shoulders are held perfectly still.) Relax the contracted muscles and allow the lumbar curve to return. That is the first step. This is the second: Stand away from the wall, keeping the abdominal muscles in and the low back flattened. Raise the ribs and chest so that the breast bone is the part of the body farthest forward.

It is difficult and sometimes impossible for the thin, undernourished, or nervous child to hold the correct posture for a long period of time. He must have rest and very simple posture exercises. These should be given not for the sake of the exercise itself, but only for the purpose of teaching muscular coordination or, in other words, the correct feeling of the normal poise of the body. As soon as he gains this, the child should try to acquire habits of standing, sitting, walking, and playing with his body in this position.

If you wish to make a few observations on good posture, observe the number of people who look well when mounting a stairway. A half hour's observation at some convenient point will surprise you. Ob-

serve how many of those climbing stairs are stooped, how many grip the railing as though it were absolutely essential to their support, how many run up stairs in leaps and bounds that lack both grace and dignity, how many walk up stairs erect, easily, as though filled with the joy of life rather than as if burdened with a load of cares and troubles.

Physical examinations in grammar schools and colleges show that poor posture is more prevalent than good posture. The United States Army examinations proved this. The need for posture training is so universal that "body mechanics," as it is called, should be taught in all our schools. Until it is, however, and even after, parents must exercise eternal vigilance in bending their twigs in they way they would have them grow.

SPORT FOR HEALTH'S SAKE

IT IS generally acknowledged that a certain amount of physical exercise is advisable if one wishes to enjoy good health. In prehistoric times man got all the exercise that his body needed in obtaining food and defending himself from savage beasts. Later, men obtained sufficient exercise from following their agricultural and pastoral pursuits. With the advance in civilization, living conditions became more complex and occupations became more specialized, and as a result there are increasing numbers of people who get very little exercise in the performance of their daily tasks. As a result of this change in conditions of living, certain muscles and organs of the body have become weak and flabby from little use, and artificial exercise is required to keep those muscles and organs in normal condition.

The value of exercise for the maintenance of health is generally recognized. The increase in circulation resulting from exercise benefits all parts of the body. Every movement which we make causes the destruction of certain body cells. Nature replaces all such normal waste of tissue and usually adds a little more than was destroyed. This process of replacement is speeded up by exercise. That is why blacksmiths' arms and runners' legs are so well developed. However, if too much exercise is taken, there results a greater destruction of tissue than the body can replace, and in such case the body is harmed instead of benefited.

People who do heavy manual labor need no artificial exercise, but those with sedentary occupations should set aside a regular time of the day for exercise just as they do for meals. Exercise should not be taken less than 3 hours after a meal, and a meal should not be taken less than 1 hour after exercise. If one is about to undertake a systematic course of exercise or to engage in any sport, it is best, before doing so, to have a physical examination made by a competent physician

to ascertain whether the organs of the body are in a healthy condition. It is a good thing to have such an examination made at least once a year.

Exercises are most beneficial when taken in the open air, because the open air contains a larger percentage of oxygen than does the air indoors. But, if for some reason or other, such as inclement or cold weather, exercise cannot be taken outdoors, then exercises indoors in well-ventilated gymnasiums or rooms are next to be preferred. However, even in cold weather open-air exercises can be taken if proper precautions are observed to prevent chilling.

Walking is the simplest of the outdoor exercises. It can be taken by practically everybody, and if supervised by a physician it may even benefit those who suffer with some disease of the vital organs. When going out for a walk, one should wear appropriate clothing—in warm weather, light, loosely fitting clothes, in cold weather, warmer woolen clothing. Shoes and stockings should be well fitted so as not to cramp the feet. The heels of the shoes should be low. For the average person in good health, a walk of from 3 to 5 miles at a rate of about 3 miles per hour is sufficient for a day's exercise. In walking one should try to keep the body erect, with the head up, the abdomen in, the shoulders back, and the chest fairly high; and in striding, the feet should be kept parallel with the toes pointing straight forward. The arms should swing freely from the shoulders. After completing the walk, it is best to take a hot shower followed by a brief cold one lasting about 30 seconds, rub the skin vigorously with a coarse towel until dry, and then change to fresh clothing.

Horseback riding is a good form of exercise, and is especially beneficial for gastro-intestinal disorders. The rhythmic vibration, which the gait of the horse imparts to the rider's body, seems to be of benefit to some of the internal organs. It is one of the favorite forms of exercise with many eminent persons.

Swimming is also a very good form of exercise; it brings into play nearly all the muscles of the body. For swimming, the water should not be too cold. Temperatures below 65° F. are too chilling for the average person to swim in. One should swim easily and slowly and breathe regularly. It is considered best to use the breast stroke or a slow trudgeon or a side stroke. The crawl stroke, while best for speed swimming, cannot usually be maintained for any length of time without undue exertion by anyone except trained athletes. About one-half hour of swimming is sufficient. This should be followed by a hot shower, a brief cold one, and a vigorous rub before getting dressed.

There are many games which provide delightful recreation and healthful exercise. Golf, tennis, and handball are such familiar and popular games, and one can get much or little exercise from these

games according to how vigorously he plays them. Eighteen holes of golf are usually sufficient for a day's exercise. In many cases, especially with older people, nine holes may be sufficient. Golf can be played by a person of any age and is the favorite exercise even of nonagenarians.

Tennis and handball are rather strenuous, and after the age of 45 the average man should not play "singles" in either tennis or handball. The "doubles" game, however, can be played by persons much older. An athletic European king, who is over 75 years old, still plays "doubles" in competitive tennis.

When the weather is too cold for outdoor tennis or handball, these games, as well as such allied games as badminton and squash, can be played indoors. Winter sports, such as ice skating, skiing, and tobogganing, afford healthful open-air exercise. It is important to remember that after any of these exercises or games one should not stand around in clothing wet with perspiration and allow the perspiration to dry on the body. He should immediately take a hot shower followed by a brief cold one, and should rub the body vigorously with a rough towel before he gets dressed. This is very important, because colds and sore muscles often result from the chilling of the body that occurs when standing around in clothing soaked with perspiration.

When engaging in these sports for exercise, one must never overdo. It is always better to feel as if one wants to continue after the exercise or game is over than to feel exhausted or tired. Keep in mind that you are exercising or playing for the sake of your health, and don't care too much whether you win or lose. Of course, it is nice to be able to excel in a game, but remember that as a famous English scientist is reported to have once suggested, extreme skill in a game is sometimes a sign of a misspent youth.

One should differentiate between sports taken for exercise and competition in sports. The former, when taken as has been advised, is distinctly beneficial, while athletic competition, on the other hand, involves severe physical and mental strain. Athletes who compete in sports say that in order to achieve victory one must work at the game and not play it. Even in sports where comparatively little physical exertion is required, the mental strain of competition may take away the enjoyment of the game. A famous golf champion is quoted as saying, when he decided not to compete in any more tournaments: "Now I can enjoy my golf."

Professional athletes are often harmed by their work. To begin with, professional athletes are usually men of exceptional physique and vitality, and one would expect them to keep well and live longer than ordinary people. Yet, the records show that many of them die comparatively young and that only a few reach the allotted span of three score and ten. Muscular strength is no index of resistance to

disease or of longevity, and it seems that the more prodigiously we give of our vitality the sooner we exhaust it. In fact, the acquiring and maintaining of a heavy musculature may result in great harm to the circulatory and excretory systems. This does not mean that competitive athletics are to be condemned altogether or are harmful to everybody; they serve a good purpose as spectacles of entertainment, and they also satisfy a desire for superiority in men and women who otherwise might admit themselves failures. Athletic ability has often resulted in renown and lasting fame to individuals who otherwise would have been inconspicuous. For many of the athletes, however, the vigorous training necessary to put them in condition to compete and the strenuous competition itself do more harm than good.

In order to benefit from athletic games and exercises, play them for the sake of the health they give and only as long as they give you pleasure. Stop when it becomes work or too great a strain. It will be well for you to have for your slogan, as far as exercise is concerned, "Sport for health's sake."

CARE OF THE HAIR AND SCALP

THE objectives in caring for the hair are to render it attractive, to keep it clean, and to retain it. In taking the proper measures to secure these, it should be remembered that the visible portion of the hair is not a living structure, but is comparable to the nails, and that nourishment for the hair comes from the blood alone and not from the various concoctions of the barber or hairdresser.

In one respect the hair is much like the small boy's face—it should be washed often enough to keep it clean. On the average, short hair may be safely washed at least once in 2 weeks, and long hair once in 3 weeks. Washing is best done with soap and water. The use of a raw egg for shampooing purposes is almost as useful, though probably not so diverting, as placing it in an electric fan. Any good toilet soap that lathers freely is useful for shampooing; there is no special virtue in tar or castile soaps for this purpose. Where grease has been rubbed into the scalp before shampooing, it can be conveniently washed out with a liquid green soap. About one-half ounce of this should be added to a quart of hot water and agitated until a lather forms. Rinsing should be thorough, and it is preferable to dry the hair by hand rather than with a dirty and quick-drying electric blower. If the hair be naturally dry a little castor oil, olive oil, or sweet almond oil should be rubbed in as soon as the hair is dry. The daily use of water upon the head is not to be recommended; too much of the natural oil is washed out, and falling of the hair is likely to result.

Brushing may well be compared to dry cleaning. It keeps the hair

clean and glossy and massages the scalp. An infant's brush should have long soft bristles; but a brush intended for adults should have stiff bristles, preferably arranged in clumps and set well apart. The central bristles in each clump should be the longer. Brushing should be done once a day. A brush should be disinfected once a week by soaking it in a 2-percent solution of formalin.

A good comb has long, wide, thick, smooth, and blunt teeth. The fine-tooth comb is of little practical value. The scratching of the scalp with a fine-tooth comb is a pernicious practice as it mechanically injures the scalp.

Whether the hair is worn short or long is a matter of individual choice, although short hair is much easier to keep clean. It is doubtful that long hair is any more of a drain upon the body than hair that is kept closely cropped, and hence is growing rapidly. The close cutting of hair after a serious illness is of little value, although it does prevent the convalescent patient from observing the falling of the hair that naturally follows such an illness.

Shaving is better done by the individual than by the barber, for many skin troubles may originate in the barber shop. A sharp razor should be used and shaving should not be done against the grain, as this removes the top of the hair follicles and infection may easily follow. The use of a lotion of any type following shaving is unnecessary. It might be well to note that cotton can be substituted for the shaving brush—a point that barbers might do well to heed.

Singeing the end of the hairs is an absurdity. The theory for singeing is that the hairs are hollow tubes from which some mysterious vital force might flow and escape. As a matter of fact, the hairs are solid and contain no body fluid.

Hair dressing may easily be overdone. The use of the curling iron, so widely used for marcelling, tends to dry the hair, and also to bend and drag it. Permanent waves are a blessing to the oily headed woman, especially during the summer months, but there are many accidents from its application; and if the hair be waved yearly, it is very likely to become dry, lustreless, lighter in color, and to break off. It is not unusual for one permanent wave seriously to damage the hair; and it should always be borne in mind that this damage is not manifest until many months after the operation. The simplest method of wearing the hair is the best. Transformations impede circulation; switches are often merely amusing. Hair that has tension, or pull put upon it, eventually falls. Large, tight knots, if worn in one place, tend to favor the development of some inflammatory condition underneath. Barettes, or large hairpins that impinge upon the back of the scalp, low down, may cause marked irritation.

There are in vogue three methods of more or less satisfactory relief to those who are dissatisfied with the color of their hair. Not all

women are as philosophic as the individual who, when asked what to do with white hair, promptly responded: "Admire it." The first of these methods is dyeing, the second is henna rinsing, and the third bleaching. Many of the hair dyes contain paraphenylene diamine, a substance that is exceedingly irritating, and nearly every physician has seen sad results from the use of such dyes. It is rather unusual for the henna preparation to prove irritating, except, perhaps, to the sense of the artistic, especially as the lower portion of the hair soon regains its natural hue. Bleaching is usually done with hydrogen peroxide, and rarely does any damage to scalp or hair. No dermatologists of repute advocate any of these methods.

Excessive exposure to sunlight, especially in blondes, dries and fades the hair and hence is harmful. On the other hand the use of tight-fitting hats impedes circulation and ventilation and may cause excessive perspiration so that the hair acquires an unpleasant odor.

The use of the ultraviolet rays upon the scalp is of true tonic value in many instances but may be "too drying" if used in excess. The violet rays of high frequency currents are about equal to the hair brush in efficacy. It is usually recommended that massage be performed by placing the fingers on the scalp and rubbing the scalp over the skull bones. To be beneficial, such a maneuver should be done daily until the scalp tingles. It is amusing to hear the stress that is laid by hairdressers on a tight scalp, although naturally a true atrophy of the lower layers of the scalp would seriously interfere with circulation.

Dry hair is due to lack of oil secreted by the glands of the scalp. Such a condition is often due to a disturbance in general health, such as some acute or chronic illness. When associated with dryness of the skin, it may be due to a lack of secretion from the thyroid gland and hence demands investigation. Dry hair will fall, crack, and often fade. The proper care of such condition demands an investigation into the causes, an attempt to increase the output of the grease glands by massage and stimulating remedies, the local application of olive, castor, coconut, or sweet almond oil, or of vaseline, and relatively infrequent removal of the oil with soap and water. The use of an oily preparation to make the hair lie flat is preferable to water. The objection is that too much is usually employed, and aside from the appearance there is a tendency for the collection of dirt and dust in the oil.

Oily scalps are a nuisance to those who have them. In general, the management of such scalps is very unsatisfactory. Even strong astringents usually fail, and the use of soap and water frequently aggravates the condition. At times dry cleaning by filling the scalp with orris root, or finely powdered corn meal and brushing it out after several hours will prove useful, although the scalp is usually caked

with a foreign substance. In other instances permanent waves are a measure of last resort.

Hair may fall from either disturbances in the general health, or from inflammatory disorders of the scalp. To enumerate all of these causes would require too much space, but in general it may be said that either acute or chronic illnesses, operations, or a lack of nutrition may result in loss of hair. Hair falling after an acute illness of short duration is almost invariably replaced in about 3 months, although it should be remembered that hair grows at the rate of only 5 inches a year. If an illness has been of very long duration, the return of the hair is not so complete. Many different and purely local inflammatory conditions may result in either temporary or permanent loss of hair. Proper treatment will alleviate most of these conditions.

White hair is the natural heritage of age; but at times it occurs as the result of illness, or of malnutrition. In the latter case it can be prevented by the restoration of the body to normal; but when once established, there is no method of restoration of the natural color, although there are the numerous methods of camouflage.

Ordinary dandruff is not a natural condition of the scalp but is due to an infection acquired from barber shops, hairdressing parlors, and hat stores, or even from leaning the head against an infected chair back. There is no doubt that mild dandruff does relatively little harm to the scalp, although a severe type may result in the permanent loss of considerable hair. Once the condition is acquired it is doubtful whether it can be permanently cured, but it can be kept in check if one is willing to spend the same amount of time upon it that he spends upon his teeth. The use of the conventional sulfur ointment, rubbed into the scalp some hours before washing, and removed with the green soap shampoo, as already described, is excellent, especially if combined with the semiweekly use of some good antiseptic that can readily be made colorless, odorless, and rapid drying. There is probably no necessity for the employment of tar and other highly odoriferous compounds for the treatment of common dandruff.

The mere fact that there are hundreds of proprietary hair tonics is an absolute proof that no one of them is of any outstanding value.

(This chapter was prepared for the Public Health Service by Dr. H. H. Hazen, of Washington, D. C.)

FIRST-AID METHODS FOR TREATING THE INJURED

FIRST AID has been defined as the temporary care of an injured person by simple, common-sense methods, based on principles of medicine and surgery, that may be applied easily by persons not professionally trained in those subjects. It should be noted that the work of first aid ceases when the injured person has been turned over to the care of a physician. The United States Public Health Service advises that everyone become familiar with first-aid methods for treating the injured.

When it is remembered that 35,000 to 40,000 persons are killed in the United States each year by traffic accidents—that is, by automobile, railroad, streetcar accidents, etc., over 20,000 by falls, more than 6,000 each by burns and drowning, and nearly 30,000 by other accidental means, or a total of approximately 100,000 persons killed and over 2 million additional seriously injured by accidents in the United States each year, the importance of first-aid care is at once obvious. The above figure does not include the minor injuries, for which there are no statistics at the present time.

The common injuries include wounds with bleeding and possible infections, dislocation and fracture of bones, burns, including those caused by chemicals, and asphyxia, or cessation of respiration. The principles upon which first aid are based are as follows:

First, cleanliness in caring for all open wounds. Persons administering first aid should be instructed not to touch or put anything on open wounds except a dry sterile compress or bandage compress. A bandage compress, which consists of several thicknesses of sterile gauze sewed to the middle of a strip of muslin, should be used to cover all open wounds. Three sizes of compresses are used—large, medium, and small. The compress should usually be covered by a retaining dressing. A triangular bandage has been found very suitable for this purpose, as it can be adapted to cover any part of the body. The triangular bandage is used either in the open form or folded cravat. In addition to being used to protect the other dressings, it may be used as an improvised tourniquet and to hold splints in place. A triangular bandage may be made from any kind of cloth such as a handkerchief, piece of shirt, or napkin. It has been found, however, that a piece of muslin 40 inches square, folded diagonally and cut

across the long side, making two triangular bandages, is most satisfactory.

The second principle in first aid is the control of hemorrhage, or bleeding. Hemorrhage from a cut artery flows rapidly in spurts or fine jets, giving little time for the blood to coagulate or clot. The blood is bright red. Blood from a vein, being under less pressure, flows steadily, but it may be rapid if from a large vein. It is dark in color. Bleeding from small arteries can often be controlled by direct pressure, but it is generally best to apply a tourniquet immediately, between the wound and the heart. Bleeding from a vein can usually be stopped by simply pressing a pad of sterile gauze over the wound and then elevating the part, having the patient lie down. Anything that makes the heart beat faster increases hemorrhage; hence in all cases of severe bleeding the patient should be kept in a recumbent or semirecumbent position and as quiet as possible.

The third principle is the restoration of breathing after electric shock, apparent drowning, and poisoning by gases, as by carbon monoxide gas or illuminating gas. This treatment is by artificial respiration. Any method of artificial respiration may be used. For the ordinary person rendering first aid, the Schaefer, or prone pressure method is the simplest and is not as tiresome as some of the other methods. Recently a conference was held at which representatives of the United States Public Health Service, the United States Bureau of Mines, the American Red Cross, and other national organizations were present, for the purpose of deciding upon a uniform technique. This technique is very simple and anyone can learn it in a short time. It is as follows:

(a) Lay the patient on his belly, one arm extended directly overhead, the other arm bent at the elbow and with the face turned outward and resting on hand or forearm so that the nose and mouth are free for breathing.

(b) Kneel straddling the patient's thighs with your knees placed at such a distance from the hip bones as will allow you to place the palms of your hands on the small of the patient's back with your fingers resting on the ribs, the little finger just touching the lowest rib, with your thumb and fingers in a natural position, and the tips of your fingers just out of sight.

(c) With your arms held straight, swing forward slowly so that the weight of your body is gradually brought to bear upon the patient. Your shoulders should be directly over the heel of your hand at the end of the forward swing. Do not bend your elbows. This operation should take about 2 seconds.

(d) Now immediately swing backward so as completely to remove the pressure, thus returning to the first position.

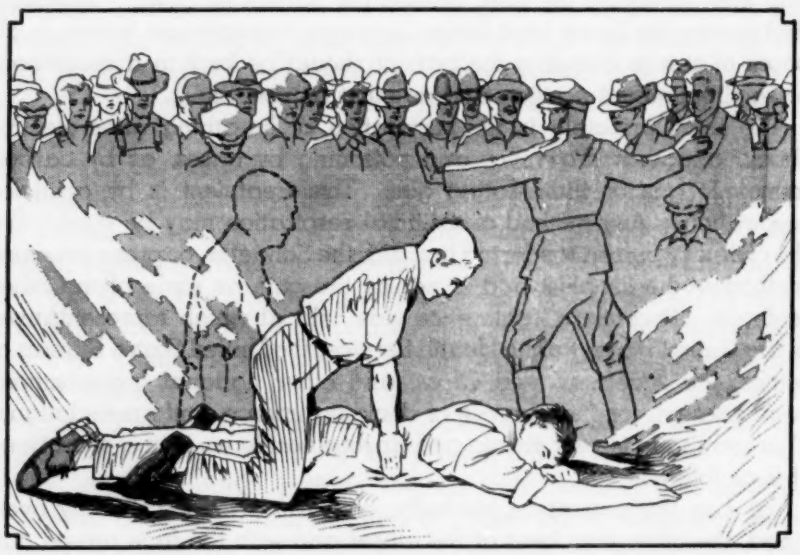
(e) After 2 seconds, swing forward again. Thus repeat delib-

erately 12 to 15 times a minute the double movement of compression and release, a complete respiration in 4 or 5 seconds.

(f) Continue artificial respiration without interruption until natural breathing is restored or until a physician declares the patient is dead.

(g) As soon as this artificial respiration has been started and while it is being continued, an assistant should loosen any tight clothing about the patient's neck, chest, or waist. Keep the patient warm. Do not give any liquids whatever by mouth until the patient is fully conscious.

(h) To avoid strain on the heart when the patient revives, he should be kept lying down and not be allowed to stand or sit up. He should



be given some stimulant, such as one teaspoonful of aromatic spirits of ammonia in a small glass of water or a hot drink of coffee or tea. The patient should be kept warm.

(i) Resuscitation should be carried on at the nearest possible point to where the patient received his injuries. He should not be moved from this point until he is breathing normally of his own volition and then moved only in a lying position. Should it be necessary to move the patient before he is breathing normally, resuscitation should be carried on during the time that he is being moved. A brief return of natural respiration is not a certain indication for stopping the resuscitation. Not infrequently the patient, after a temporary recovery of respiration stops breathing again. The patient must be watched and if natural breathing stops, artificial respiration should be resumed at once.

(j) In carrying out resuscitation it may be necessary to change the operator. This change must be made without losing the rhythm

of respiration. By this procedure no confusion results at the time of change of operator and a regular rhythm is kept up.

The fourth principle relates to dislocations and fractures of bones, which are treated by immobilization in a comfortable position, and a natural one if practicable, care being taken not to move the injured part unnecessarily. Well-padded splints are held in place by cravat bandages.

Fifth, burns are treated, after removal of the clothing, by use of sterile gauze or sterile picric acid gauze and an outer dressing, such as a triangular bandage, to hold the gauze in place and exclude the air. The exclusion of air is important. Precautions of cleanliness should be observed as stated for open wounds.

Sixth, shock, or vital depression, which accompanies all injuries to some degree, is treated by keeping the patient lying down at rest; keeping him warm by covering him with blankets or clothing, using hot-water bottles, hot bricks, or similar means, aiding circulation by rubbing the extremities toward the heart, but not away from it; and by the use of common stimulants, as hot coffee or aromatic spirits of ammonia.

Seventh, transportation may be necessary to get an injured man to a place of safety, or to a more comfortable location, or to get him to a hospital and a physician. The methods vary with conditions, but the principle of transporting him so that he will suffer no further injury is important, whether he is transported on a stretcher or by one, two, three, or more persons.

In summarizing, the goal of first-aid training should be prevention—the reduction of accidents to a minimum by education and legislation. But as this minimum can never be zero, it is well to bear in mind the fundamental principles in first-aid care, which are as follows:

1. Asepsis or cleanliness in caring for open wounds.
2. Control of hemorrhage by pressure and position of injured part.
3. Treatment of shock by keeping patient warm and at rest and by giving simple stimulants.
4. Artificial respiration in asphyxia, electric shock, etc., combined with the use of pure oxygen in carbon monoxide cases.
5. Asepsis in treatment of burns; protection from air if this can be done with aseptic method; antisepsis and some relief of pain by use of picric acid gauze.
6. Immobilization of dislocations and fractures.
7. Transportation by methods that will not increase the extent of the injury.

In addition to the benefits gained by the early care of the injured, first aid has been found actually to tend to lower accidents by making people more careful.

HYGIENIC ADJUSTMENTS THROUGHOUT LIFE

THE purpose of this chapter is to emphasize the very significant hygienic relationship that exists between the important changes which take place in the human body from birth to death, and the modification of one's habits and mode of life necessary to bring him into harmony with these changes, if he would maintain health and well-being. This, it would seem, might very properly be called an adjustment between bodily modification and mode of life. The word used is a matter of no great significance, so long as the underlying idea is understood.

It is, of course, a well-known fact that the human body undergoes profound changes as the years advance and that each individual human being is called upon during an average lifetime to adjust himself to these important changes which take place within his own body. Most of these changes occur gradually and slowly, and readjustments in our habits and customs of living can be readily made if one knows what is taking place and appreciates the necessity for such readjustments. Only one of these adjustments is radical and rapid, and that one occurs at the time of birth, when the human organism must immediately accommodate itself to sudden and profound changes of existence. After that, the other changes come gradually and slowly with the years.

While these changes are gradual, there are certain periods of life when they are recognized by all; and these various age periods, therefore, become significant in this connection. Such a division into age periods is largely arbitrary and somewhat indefinite. This makes no real difference, however, as long as we recognize that they do occur and that the changes in the body are more or less characteristic of the respective age periods.

You will recall that in Shakespeare's play, As You Like It, there are some well known lines beginning with the familiar metaphor—"All the world's a stage," wherein the poet divides man's life into seven ages, from infancy to extreme old age. He speaks of the "mewling infant," the "whining schoolboy," the "lover sighing like a furnace," the "soldier jealous in honor seeking the bubble reputation," "the justice with fair round belly," then the "lean and slipper'd pantaloon stage," and, finally, "second childishness."

These seven periods may serve as well as any others, although ex-

treme old age, in this connection, might be omitted. To simplify this conception let us say that these age periods are infancy, childhood, adolescence, manhood, middle age, and old age. As we pass through these periods of existence many readjustments must take place to meet concomitant bodily changes. It is not necessary for the present purpose to point out definitely the changes corresponding to these various age periods; at this time it is the purpose rather to lay stress upon the fact that such changes do occur, that they are more or less characteristic of the respective periods, and that if we fail in our habits of life to conform to such changes, we shall not maintain bodily health and vigor.

Besides the bodily changes, we, of course, have mental changes as well, and our outlook on life will vary as we pass through these periods. It is a mistake, perhaps, to separate so sharply bodily and mental changes, because the body is a unit; but the mental changes are emphasized for the reason that they modify in a very significant way a person's attitude toward existence. To paraphrase a well-known biblical saying: "As a man thinketh in his heart, so will he live." Our thinking, then, and our general attitude toward life becomes, in this connection, important, and readjustments in the mental sphere are just as significant as they are in the physical sphere.

It is not the purpose of this chapter to point out the changes that may be characteristic for these different age periods or to lay down specific rules of living to meet them. In fact, the early periods of infancy, childhood, youth, and manhood will be passed over, and the advent of middle age, with its peculiar problems, will be briefly discussed.

Whatever else may be said of these progressive bodily changes, by the time we

reach middle age we realize fully the truth which underlies them all, and which we express in the term "growing old." This process of age is in all likelihood very elaborate and complicated, but one of its obvious and important results is the gradual replacement of our body cells by connective tissue, what we might call a sort of scarring process. This means that the body cells undergo a change perhaps both in quantity and in quality, leaving the tissues and organs which they compose with less vigor and less recuperative power.

When a man begins to reach middle age he perhaps for the first time fully appreciates what it means to grow old. This fact becomes evident in his consciousness in ways that he cannot overlook. He begins to notice that his body is no longer capable of doing those things which previously he could do with ease, and he finds that his habits of life must be changed if he would maintain physical well-being.

This is for many a difficult time of life, and it is a period when readjustments are important. Briefly, it means that the individual must realize that he has passed the apex of his existence and is now on the downward incline. Such a thought implies a profound readjustment in his outlook upon life, sometimes with considerable mental disturbance. Along with this mental adjustment there are not lacking indications which warn the individual that he must change his habits to conform to the changes in his body. He is a wise person who realizes all this and readjusts himself accordingly, maintaining at the same time the mental poise which accepts the inevitable without repining.

The mental attitude is important, and the emotional reaction is even more so. The old adage that a man is only as old as he feels expresses a good deal of truth. There is no need for gloom. A man of middle age, when knowledge and experience have ripened into at least a sort of wisdom, may look forward to many rich years of a useful and happy life; but he must make the necessary compromises with his body to do so.

His adjustments mean largely modification in his thinking, and in his habits of eating, drinking, sleeping, and exercise. He finds that he can no longer eat as he once did, and as a matter of fact he does not need the quantity of food which he once consumed. If he indulges in alcohol at all he must now do it with discretion and judgment. He must give greater care to his sleeping and secure a complete night's rest, and he can no longer safely indulge in strenuous exercise. Making a sudden sprint to catch a streetcar is no longer an innocuous pastime; it may be highly dangerous. One finds himself obliged to consider many things never before given a thought, or else pay the penalty. It is no longer wise to live at high pressure; life must flow with more ease and more deliberation.

It may be observed, however, that mere years alone are not neces-

sarily a safe guide as to when one has reached middle age. There are numerous individual variations with regard to these bodily changes; one man will show them comparatively early in life, another much later. In other words, a man is not so much as old as his years as he is as old as his body. It has been well said that a man is as old as his arteries, because heart and arteries are necessary to existence, and when they undergo the changes incident to middle life and old age they are no longer capable of meeting the demands which were formerly made upon them. These demands must now be reduced to their capacity.

Specific rules of conduct and definite instructions as to the adjustments which one must make have been avoided. It is not the purpose here to outline specific rules of conduct; it is rather to present a general fact or law and a principle of hygiene based upon that law. If one learns principles, one can formulate rules with ease. It seems better first to establish as clearly as possible the principle which underlies the subject rather than to attempt a mere formulation of rules of conduct; and the principle which an attempt has been made to establish definitely is that if a man would maintain health and vigor he must adjust himself to the changes which take place in his body at various stages of his existence.

It may be said in conclusion that there is one general rule which is applicable not only to this subject but to many another problem of hygienic living, and that is the rule of moderation, the golden mean—moderation in all things. It is usually the excess which does the harm. To use a well-known figure, it might be said that moderation is the silken cord upon which we may safely string the pearls of all our hygienic habits.

HYGIENE OF OLD AGE

THE approach of old age is rightly viewed with considerable apprehension. On the part of elderly persons there is fear lest the physical and mental faculties may become impaired, with resulting helplessness and hopelessness. Then, too, relatives and

friends are concerned because ordinarily the care of the aged, no matter how willingly done, is often a tax on the strength of those upon whom the duty falls. Consequently, this chapter will prove of interest not only to those who are elderly but also to those with whom they make their homes. Likewise persons upon the threshold of advanced life will profit by the suggestions offered, for the foundation of a hale, healthy, happy old age is laid in early life.

It is difficult to define old age. Some are old at 60 while others

are mentally and physically alert at 80. Old age cannot be assessed by the sum total of years lived. Even the psalmist's "three score and ten years" have been accepted too literally. The "too old at forty" gospel has not helped to dispel this idea. It is often said that "a woman is as old as she looks, while a man is as old as he feels." The definition popular among medical men that "a man is as old as his arteries" is probably a better criterion of age. In effect this means that the longevity of an individual is definitely influenced by the condition of his arterial system. The premature hardening of arteries, often due to avoidable infections, improper diet, and possibly worry and strain is to a considerable extent preventable.

There is too much of a tendency among persons reaching a certain age to persuade themselves that they have reached the last page of the book of life. At this point, they seem to think that both mental and physical activities should be relinquished. The contrary viewpoint should hold. Efforts should be made to preserve such an equanimity of mind and purpose that old age will become a period of comfort and enjoyment. Old age should be a physiological change of not unpleasant nature.

Mental as well as physical diversion is essential to true happiness in old age. The reading of current newspapers and periodicals or of good literature is a definite antidote to the frequent habit of introspection and the tendency of the aged to despond. Sewing, weaving, simple carpentry, or other light manual occupations requiring dexterity and mental application are useful supplementary measures. The inclusion of elderly persons in social gatherings and spirited conversations with younger persons is often stimulating. It should not be felt that a person is no longer entitled to an interest in life because he is old. This too frequent attitude is an unjustifiable encouragement of complete submission to the inevitable.

Radio broadcasting has opened up a vista of enchantment to the aged, especially to those with impaired hearing or failing vision. Not only does radio interest and instruct but it often soothes. With its kaleidoscopic changes of program, radio offers diversion which is hygienically helpful. Good radio music is thoroughly enjoyable, no doubt beneficial. One should not, however, go to the extreme of keeping late hours even for interesting radio programs.

The helpless-hopeless, willful-woeful atmosphere which is permitted to surround many elderly persons is conducive to premature mental break-down. A slight accident or illness may be magnified into real suffering by thoughtless suggestion or autosuggestion. A morbid self-interest is readily induced in the elderly, some of whom revel in coddling, commiseration, and unwise sympathy. The person who continues to respond to the elementary stimuli, namely, self respect, self reliance, and the instinct of self preservation, does not suffer from old age.

Many of the problems connected with the hygiene of old age are due to lowered mental power. Therefore, a cheerful and optimistic attitude toward the aged, especially during sickness, is essential to their well being. Old people regard their condition as far less serious when fully dressed and out of bed. Under these conditions, the excretory organs function more satisfactorily. However, when an elderly person complains of being over-tired, or otherwise not physically fit, rest in bed for a day is advisable. By providing light and easily digested food and applying warmth to the body of an aged patient he is often tided over a mild or threatened illness.

Special attention should also be paid to proper clothing, diet, and exercise of the elderly. Inasmuch as body heat decreases after the age of 40, exercise is required to provide some of the deficiency. An English physician who recently reached the age of 95 years, advocates and practices a daily walk in the open, regardless of the weather. He cautions, however, against exercising to the point of fatigue. While all old people may not be able to follow this hardy example, it is nevertheless true that a moderate walk on pleasant days is a beneficial stimulant.

The circulation of the aged being less vigorous, the effects of sudden changes of temperature should be guarded against. Clothing should be warm though not unnecessarily heavy. During cold weather, the air of homes should be comfortably warmed and adequately humidified. However, a temperature of not more than 70° F. will usually be found quite comfortable and beneficial.

The digestive powers of the elderly are less vigorous and there is not as great a demand for body fuel as in earlier years. Absorption too is less active, while the adaptability of the body as a whole to alterations in environment is diminished. When a person past 50 years of age continues to consume abundant breakfasts, substantial lunches, and heavy dinners he is inevitably shortening his life. A change of diet and habit is obviously required.

The principal features of a proper diet in old age include first, a diminished quantity of food; second, the ingestion of food at more frequent intervals and in smaller quantities; and third, the use of easily digestible food which does not produce either too large or too small a residue of waste matter. Persons who live to advanced ages are invariably lean, have partaken moderately of food and drink in earlier life and as a rule have eaten relatively little meat in later life. Let us repeat, the foundation for a happy and comfortable old age is laid during the active earlier period of life.

Though the desire to live long is universal and fundamental, the contemplation of the state of old age is often clouded by the possibility of impaired mental faculties and physical infirmities. With reasonable attention to certain well defined and easily accessible principles

of personal hygiene, it is possible to grow old gracefully. Furthermore, it is also possible, in many instances at least, to retain one's faculties to such an extent as to make old age a pleasure rather than a burden.

HEALTH RULES

1. Ventiiate every room you occupy.
2. Wear loose, porous clothing suited to season, weather, and occupation.
3. If you are an indoor worker, be sure to get recreation outdoors.
4. Sleep in fresh air always, in the open if you can.
5. Hold a handkerchief before your mouth and nose when you cough or sneeze and insist that others do so.
6. Always wash your hands before eating.
7. Do not overeat. This applies especially to meats and eggs.
8. Eat some hard and some bulky foods; some fruits.
9. Eat slowly—chew the food thoroughly.
10. Drink sufficient water daily.
11. Evacuate thoroughly and regularly.
12. Stand, sit, and walk erect.
13. Do not allow poisons and infections to enter the body.
14. Keep the teeth, gums, and tongue clean.
15. Work, play, rest, and sleep in moderation.
16. Be serene. Worry is the foe of health. Cultivate the companionship of your fellow men.
17. Avoid self-drugging. Beware the plausible humbug of the patent-medicine faker.
18. Have your doctor examine you carefully once a year. Also consult your dentist at regular intervals.

REFERENCES

IN THE following list are mentioned articles, publications, and books which should be especially useful to the individual interested in his personal health. Quite obviously the list is incomplete, but it should provide promising "leads" to more detailed information.

Many of these publications may be obtained in local public or medical libraries. When not available from these sources they may be purchased from the publishers or possibly borrowed from a circulating library.

Author	Title	Publisher
American Medical Association	NOSTRUMS AND QUACKERY	American Medical Association, Chicago, Ill.
Do	HYGEIA (MONTHLY MAGAZINE)	Do.
American Public Health Association.	BIBLIOGRAPHY ON PUBLIC HEALTH AND ALLIED SUBJECTS.	50 W. 50th St., New York, N. Y.
American Social Hygiene Association.	SELECTED LIST OF SOCIAL HYGIENE BOOKS AND PAMPHLETS FOR HOME AND PUBLIC LIBRARIES.	Do.
Bauer, W. W	CONTAGIOUS DISEASES: WHAT THEY ARE AND HOW TO DEAL WITH THEM.	A. A. Knopf.
Chenoweth, L. B., and Morrison, W. R.	COMMUNITY HYGIENE	F. S. Crofts.
Clendening, Logan	BEHIND THE DOCTOR	A. A. Knopf.
Do	THE HUMAN BODY	Do.
DeKruif, Paul	MICROBE HUNTERS	Harcourt, Brace & Co.
Diehl, H. S	HEALTHFUL LIVING	McGraw, Hill Book Co.
Fishbein, Morris (editor)	MODERN HOME MEDICAL ADVISER	Doubleday, Doran & Co.
Fisher, Irving, and Fisk, E. L	HOW TO LIVE	Funk & Wagnalls Co.
Haggard, Howard W	WHAT YOU SHOULD KNOW ABOUT HEALTH AND DISEASE.	Harper & Bros.
Kallet, Arthur	100,000,000 GUINEA PIGS	Vanguard Press.
Metropolitan Life Insurance Co	SEPARATE PAMPHLETS ON MANY PHASES OF HYGIENE, HEALTH, AND DISEASE.	1 Madison Square, New York, N. Y.
Mustard, H. S	RURAL HEALTH PRACTICE	Commonwealth Fund.
National Health Series	20 VOLUMES, EACH DEALING WITH A PHASE OF PERSONAL HEALTH.	Funk & Wagnalls Co.
Oliver, Wade W	STALKERS OF PESTILENCE	Paul B. Hoeber.
Rice, Thurman B	SEX EDUCATION	American Medical Association.
	1. FOR BOYS AND GIRLS OF TEN.	
	2. FOR BOYS OF HIGH SCHOOL AGE.	
	3. FOR GIRLS OF HIGH SCHOOL AGE.	
	4. FOR BOTH SEXES OF COLLEGE AGE.	
	5. FOR PERSONS OF COLLEGE AGE AND OLDER.	
Rosenau, Milton J	PREVENTIVE MEDICINE AND HYGIENE	D. Appleton & Co.
Sherman, H. C	FOOD AND HEALTH	Macmillan Co.
Smiley, Dean F., and Gould, Adrian G.	COMMUNITY HEALTH	Do.
Solomon, Charles	THE TRAFFIC IN HEALTH (NOSTRUMS)	Navarre Publishing Co.

Author	Title	Publisher
Trudeau, Edward L.	AUTOBIOGRAPHY	Doubleday, Page & Co.
Turner, C. E.	PERSONAL HYGIENE	C. V. Mosby.
U. S. Public Health Service	CONTROL OF COMMUNICABLE DISEASES (REPRINT NO. 1697).	U. S. Public Health Service, Washington, D. C.
	WHAT TO DO IN CASE OF ACCIDENT. MISCELLANEOUS PUBLICATION NO. 21.	Do.
Vallery-Radot, Rene	THE LIFE OF PASTEUR	Doubleday, Page & Co.

In addition to the foregoing, instructive pamphlets on health may be secured by writing to the United States Public Health Service, Washington, D. C. The subject concerning which information is desired should be specified.